

invention, will be apparent to those skilled in the art
on reference to this description. It is therefore
contemplated that the appended claims will cover any such
modifications or embodiments as fall within the true
5 scope of the invention.

WHAT IS CLAIMED IS:

10 1. A structure suitable for use in a semiconductor
electronic device, comprising:

side walls lying over the sides of a gate
electrode of a field effect transistor formed over a
substrate, said each side wall having a structure convex
15 toward the substrate side, and

silicides respectively formed over a source and a
drain and the gate electrode of said field effect
transistor.

20 2. The structure as claimed in claim 1, wherein
said structure convex toward the substrate side is
arcuate or rectangular.

25 3. A structure suitable for use in a semiconductor
electronic device, comprising:

side walls composed of silicides, which are lower
than side walls formed on the sides of a gate electrode

of a field effect transistor formed over a substrate,
said side walls being formed in contact with said side
walls formed on the sides thereof; and
silicides respectively formed over a source, a

- 5 drain and the gate electrode of said field effect
transistor.

4. The structure as claimed in claims 1 to 3,
wherein said substrate is an SOI substrate or an Si
10 substrate.

5. A method of manufacturing a semiconductor
electronic device, comprising the following steps:

- a step for forming a gate electrode of a field
15 effect transistor over a substrate;
a step for forming first side walls over side
walls of said gate electrode on a self-alignment basis
respectively;
a step for performing over etching and etching
20 edges of said first side walls until the exposure of said
substrate by using trenching effects at the edges of said
first side walls;
a step for subjecting the exposed substrate to
thermal oxidation to thereby form an oxide film
25 substantially identical in quality to a gate oxide film;
and
a step for forming second side walls over side

walls of said first side walls; and
wherein said respective steps are successively
executed.

- 5 6. A method of manufacturing a semiconductor
electronic device, comprising the following steps:
 a step for forming a gate electrode of a field
 effect transistor over a substrate;
 a step for forming first side walls over side
10 walls of said gate electrode on a self-alignment basis
 respectively;
 a step for performing over etching and etching
 edges of said first side walls until the exposure of said
 substrate by using trenching effects at the edges of said
15 first side walls;
 a step for further etching said exposed substrate;
 a step for forming an oxide film substantially
 identical in quality to a gate oxide film by thermal
 oxidation; and
20 a step for forming second side walls over side
 walls of said first side walls; and
 wherein said respective steps are successively
 executed.

- 25 7. A method of manufacturing a semiconductor
electronic device, comprising the following steps:
 a step for forming an SiO₂ film over a substrate;

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a step for forming Poly-Si or amorphous Si over said SiO₂ film;

a step for patterning said Poly-Si or amorphous Si by known photolithography and etching;

5 a step for selectively growing an Si film over the surface of said Poly-Si or amorphous Si;

a step for performing etching with the selectively grown Si film as a mask to thereby remove said SiO₂ film;

10 a step for further performing etching to thereby define trenches in said substrate;

a step for removing the selectively grown Si film and said Poly-Si or amorphous Si;

15 a step for forming a gate electrode of MOSFET within a region interposed between the trenches defined in said substrate; and

a step for forming side walls over side walls of said gate electrode and burying the trenches defined in said substrate by lower portions of said formed side walls.

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8. A method of manufacturing a semiconductor electronic device, comprising the following steps:

a step for defining trenches in a substrate by known photolithography and etching;

25 a step for forming an Si film over said substrate by selective epitaxial growth of Si to thereby adjust the depth and width of said each trench;

a step for forming a gate electrode of MOSFET
within a region interposed between the trenches defined
in said substrate; and

5 a step for forming side walls over side walls of
said gate electrode and burying the trenches defined in
said substrate by lower portions of said formed side
walls.

9. A method of manufacturing a semiconductor
10 electronic device, comprising the following steps:

a step for forming a gate electrode over a
substrate;

a step for forming first side walls over side
walls of said gate electrode;

15 a step for depositing Poly-Si or amorphous Si over
said substrate;

a step for performing anisotropic drying etching
of Si to leave said Poly-Si or amorphous Si equivalent to
less than or equal to one-half the height of said each
20 first side wall over side walls of said first side walls,
thereby forming second side walls;

a step for next forming a metal film and forming
silicides by heat treatment.

25 10. The method as claimed in claims 5 to 9,
wherein said substrate is an SOI substrate or an Si
substrate.